E PLURIBUS UNUM? A CRITICAL REVIEW OF JOB QUALITY INDICATORS

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Abstract

To consider quality of work a regulatory objective requires the development of a coherent concept of job quality and constructing indicators that allow monitoring its evolution and distribution. The aim of this paper is to offer a guided tour around the different indicators of job quality proposed in the literature. In order to do so, first, we analyse those methodological decisions that have to be made in the process of designing an indicator of job quality, from both a theoretical and methodological/technical perspective. Second, these results are used to critically discuss the different empirical approaches to measurement of job quality found in the literature.

Keywords: job quality · work conditions · employment conditions · indicators

1. INTRODUCTION

In spite of a widespread worrying among researchers and international institutions about quality of work, the concept and measurement of this issue is far from being a subject of consensus. In a context of a growing social and political concern about the evolution of job quality, this is not a negligible trouble. For example, the European Union's *more and better jobs* and International Labour Organization's *decent work* flagships will continue being meaningless if no minimum agreement on what job quality can be defined and measured is reached. The aim of this paper is to accomplish the tiring -but still undone- task of sketching the different methodologies and indicators proposed in the literature to measure job quality, both at national and international level. This allows deriving some policy guidelines in order to build appropriate indicators of quality of work in the future.

The paper unfolds as follows. Section 2 presents a list of reasons backing the importance of having a reliable indicator of job quality. In section 3, the different approaches than can be followed in the process of selecting the dimensions of work and employment relevant for job quality are discussed in detail. In order to do so, existing measures are categorized into three kinds of methodological strategies, that is, purely subjective indicators, subjective selection with objective measurement and a theoretical-based approach to job quality. After highlighting the merits and shortcomings of the different methodological options, in the fourth section an open model of job quality is suggested, pointing out the different dimensions of job that should be considered when measuring job quality and the indicators appropriate for "dressing" them. Against this background, section 5 offers a systematic review of roughly twenty empirical proposals of measuring job quality found in the literature and policy practise, highlighting the main characteristics, strengths and shortcomings of such indicators. The sixth and final section sums the main lessons and contributions of the paper.

2. THE IMPORTANCE OF HAVING A RELIABLE INDICATOR OF JOB QUALITY

There are a number of reasons that justify the research on job quality and its monitoring for policy purposes. In the first place, the average European full-time worker spends almost 42 hours a week in his job (and the average part-time worker, 20 hours). That means that a quarter of the available weekly time of the representative full-timer passes at workplace. It is obvious that whatever happens in such long period has important implications for people well-being. Furthermore, there is abundant evidence that human beings do not only work for earning a living, but that work is a substantial ingredient of their social and personal lives in itself, being an activity that is important for self-realization and social integration. In fact, the quality of working life is a key element of the quality of life. In fact, the strong linkages between job satisfaction and subjective well-being mean one of the few certainties in the analysis of happiness (Diener *et al*., 1999) and there is a compelling empirical evidence showing how having work and some job characteristics clearly affects self-reported well-being (Dolan, Pasgood and White, 2008).

Secondly, the standard labour market analysis usually focuses on quantity, the number of jobs, and its correlate, that is, the employment or unemployment rate. But jobs can be hardly considered as a homogenous category. There are "good" and "bad" jobs, as jobs come with different combinations of amenities and disamenities, different bundles of positive and negative attributes. In order to rightly evaluate the performance of an economy, it is important to be able to know the quality of the created and destroyed in that process of creative destruction economic growth is. Mainstream Economics frequently argues for the existence of the so-called compensating differentials, that is, *ceteris paribus*, bad working conditions are fully rewarded by higher wages, making the any discussion on job quality completely useless. As long as we cannot rely on the existence of such a process of compensation, the question of job quality will deserve a specific treatment with specific indicators. In this respect, empirical evidence show that this ideal does not in general apply and it is mainly relevant in some cases involving death risks.[1]

In the third place, in these times of deep changes in labour market (globalization, accelerated technological change, etc.) –which some commentators have interpreted in

terms of the rise of a new capitalism- widening the analysis of work relations to take into account changes in other dimensions beyond employment numbers or the earnings structure can foster our understanding the nature of changes disentangling myth from reality (Doogan, 2009)

In the fourth place, understanding the dimensions behind job quality could allow measuring separately both the quantitative and qualitative dimensions of work contributing to analysis the eventual trade-off between job quantity and job quality, giving empirical support to the existence of different *employment regimes*.

Two final reasons can be presented favouring the study of job quality. First, job quality presents the characteristics of the type of goods and services known in Economics as *luxury goods*, meaning than their demand grows faster than income. If that is the case, it is to be expected that in the process of economic growth workers' interest in job quality will grow. That also means that jobs which at present can be considered as average or good quality jobs might turn, as time goes by, into "bad" jobs, leading to a process of social dissatisfaction even in a context of high employment and stable job quality. The second final reason points to the sheer fact of the relative magnitudes of the people employed versus unemployed. Perhaps being unemployed is the worst circumstance a worker can face in terms of employment, and the best example of a labour market failure. Nevertheless, it should be beard in mind that, in a normal economic situation, the great majority of workers is employed, and, thus, an important part of their interest is in how their jobs stand in terms of quality.

3. WHAT MAKES A GOOD JOB?

Job quality is necessarily a multidimensional concept. The general or overall quality of a job is the sum of multiple aspects affecting both the employment relation and work itself. This multidimensional nature of job quality makes more difficult the development of a single or a system of indicators, as previously to such development is necessary to define what aspect should be taken into consideration and their overall impact on job quality. In this section we review three different possible strategies to develop such list. The first

strategy starts from the recognition of the difficulty of properly identifying all the aspects affecting job quality and their importance, proposing a shortcut for such task based on the level of job satisfaction. The second strategy is based on the utilization of workers surveys to directly select the elements of job quality considered important by workers themselves. The last strategy takes a complete different approach to the issue of job quality using the theoretical work of economists and sociologists on job quality as a route map to select the relevant dimension of job quality.

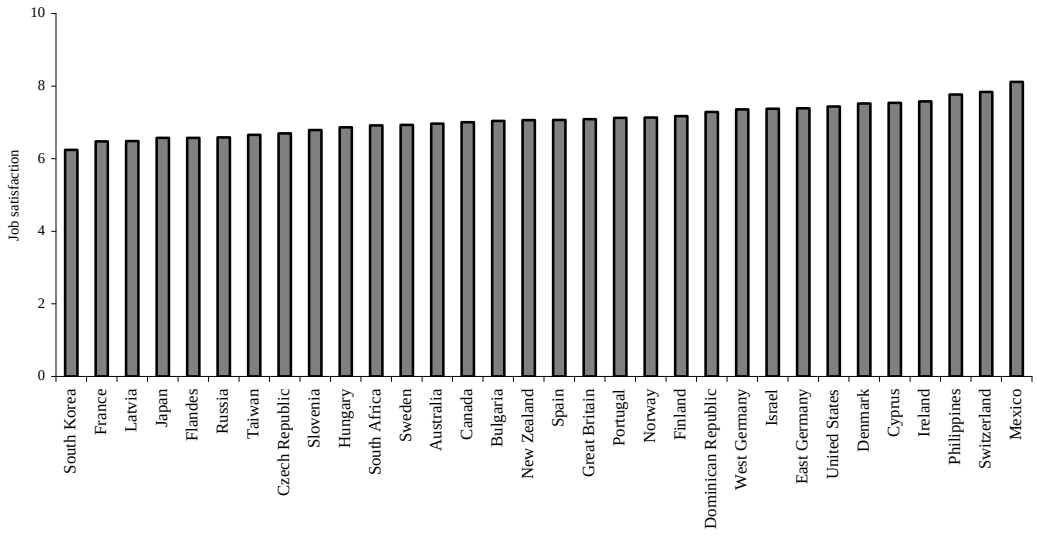
3.1 SUBJECTIVE APPROACH I: JOB SATISFACTION AS AN INDICATOR OF THE QUALITY OF JOBS

The recognition of the complexity of this conceptual task, even without considering the difficulties related with the measurement of the chosen variables, has led some researchers to favour a completely different approach. The argument is the following: we are interested in measuring job quality because we want to measure the impact the characteristics of jobs have on the well-being of the worker. Then, instead on focusing on the input (characteristics of jobs) we can centre our efforts on measuring the output, that is, the well-being of the worker at his job. Unfortunately, lacking a method to directly measure well-being, we have to turn to an indirect indicator of it. An obvious and common choice is to use the declared level of satisfaction of the worker with his or her job, a strategy with several advantages. First of all, it allows the researcher turning a multidimensional concept into a single index, much easier to manage and interpret. Secondly, this perspective considers differences in tastes in relation to what is a good job: instead of using a rigid framework of good and bad characteristics for every worker, in this approach it is the worker, by himself or herself, the one than applies his/her own criteria about what is positive and negative of a job. For example, if someone likes working at night, or at weekends, then he or she will consider it as a positive characteristic of work, and will contribute to his or her wellbeing and satisfaction with the job. Thirdly, it avoids the need to measure and weight the different characteristics. Fourthly, when answering to a question on job satisfaction the worker will consider many attributes of his or her job, more

characteristics that can ever be included into any multidimensional model of job quality. Last, but not least, the information can be gathered easily and at a low cost. Probably because all these reasons, there is a growing literature on job satisfaction, its determinants and differences among groups of workers and countries.

Unfortunately, this approach has important shortcomings, which some researchers consider that it makes job satisfaction a less than suitable indicator of the quality of jobs, notwithstanding their merits for other types of research (Muñoz de Bustillo and Fernandez-Macías, 2005). There are several facts backing this position and that can be illustrated looking at figure 1, which reproduces the average score in terms of job satisfaction in 33 countries of different cultural background and level of development.[2] First, it is remarkable the high level of job satisfaction is considerably high elsewhere. Second, some middle-income or even developing economies (like Mexico) present indicators of job satisfaction similar to those observed in Scandinavia. Third, the ordering of the countries (with France at the bottom or are at odds with the general knowledge about job quality and working conditions in rich and poor countries, and should make us think that there is something wrong with the use of this indicator as a proxy of job quality.

Figure 1. Job satisfaction across countries (2005)



Source: Authors' analysis from *2005 International Social Survey Program* microdata.

Summing up, although job satisfaction might be related to job quality, there are many other variables not related with job quality (dissonance, relative thinking, adaptable expectation, etc) affecting the level of job satisfaction. From this perspective, this variable is ill-suited as an output or "catch-all variable" of job quality. Furthermore, to the extent that job satisfaction depends on different dimension of job quality, it would be inappropriate to include job satisfaction as another element in a system of indices of job quality as it would mean to be including input and output in the same index, hence, counting twice the impact of the variables considered.

3.2 SUBJECTIVE APPROACH II: ASKING WORKERS ABOUT WHAT MAKES A GOOD JOB.

An alternative to evaluating the quality of jobs using a job satisfaction index, but still based on workers' evaluations, is to ask workers about what types of job characteristics they consider more important when defining what makes a good job. One advantage of such type of approach is that most surveys on quality of working life include questions about the desirability of specific job attributes. This is the case of the *2005 International Social Survey Program*, whose information allows computing the percentage of people in each country who consider a certain job attribute as very important. Drawing from this survey (table 1), there are several points to be highlighted. First of all, in all three cases high income is not the most valued attribute of a good job. Although Europeans give high income more importance than workers from the US or Japan, barely a third consider this attribute important or very important (much less than job security, usefulness to society or that it is an interesting job).[3] Even when viewed in the long run (as opportunities for advancement, supposedly also in terms of wages), only a fourth of those interviewed consider such attribute as important or very important. Secondly, the most valued attribute in the US and EU (and the second most valued in Japan) is job security. Thirdly, workers are also quite concerned about the nature of the job, whether is interesting and useful to society. Lastly, in contrast with the growing literature and on work-life balance and autonomy at work, the importance given by workers to these two aspects seems secondary to the other attributes already mentioned (29.8 and 22.3% in the EU).

Focusing now on the different importance given across countries of the sample to the different attributes we can see that, although there are some important differences, as the low importance given in Denmark to job security, or the very low importance given in the same country to high income compared to the weight given to income in Bulgaria, for many of the attributes there is quite an agreement between countries about their relative importance. Figure 2 shows the coefficient of variation, a measure of relative dispersion, of the importance given to the different attributes in the 17 EU countries of the sample.

With the exception of the issues related to present and future income, with relative high dispersion of the importance given to them among the countries of the sample, the rest of attributes have a relatively low dispersion, something specially valid for the attributes of having an interesting, useful and secure job, attributes which are highly valued everywhere.

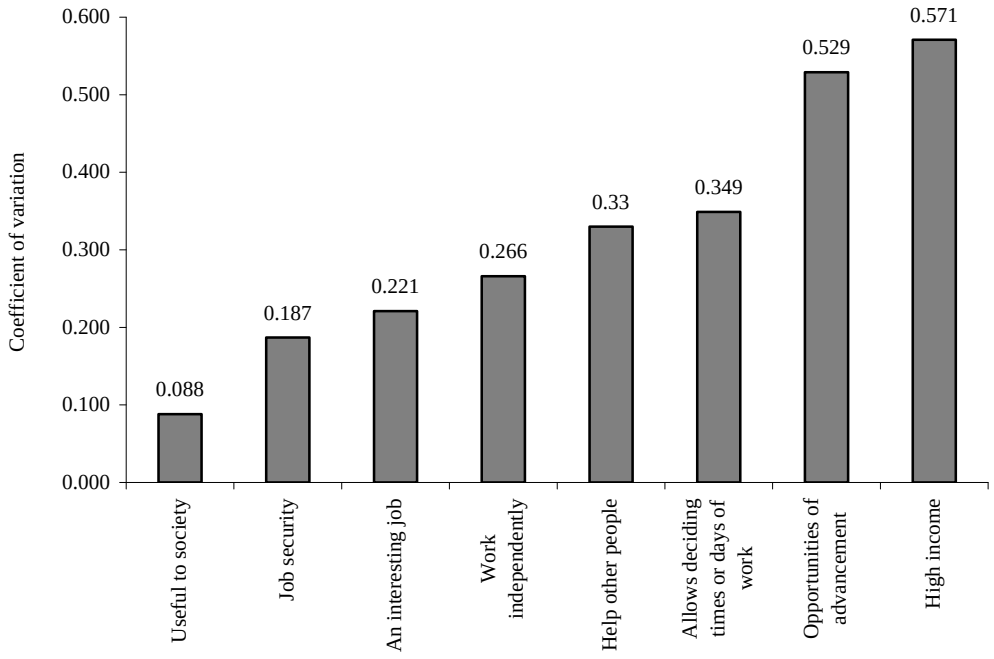
Table 1. What makes a good job?

	Job Security	An interesting job	Useful to society	High income	Opportunities of advancement	Autonomy	Help other people	Allows deciding the times or days of work
Australia	58.8	50.0	52.6	14.8	24.8	25.2	24.8	14.8
Bulgaria	79.1	54.3	45.3	78.2	54.8	39.9	37.5	39.6
Canada	56.1	59.8	45.6	18.3	29.8	31.7	31.4	20.6
Cyprus	47.4	25.4	54.8	46.8	20.0	20.9	16.6	16.4
Czech Republic	58.0	33.2	49.7	31.3	14.6	18.8	15.7	14.0
Denmark	31.9	58.8	44.5	9.6	6.3	44.7	26.2	18.1
Dominican Rep.	34.8	38.5	56.8	49.1	46.7	32.9	37.9	30.4
East Germany	74.1	49.6	49.3	28.5	19.3	40.9	29.4	13.9
Finland	53.6	50.4	40.7	20.3	10.2	22.6	15.2	20.7
Belgium	54.1	40.8	48.0	17.6	22.5	25.4	20.0	21.9
France	63.2	66.3	46.4	22.6	22.7	23.0	19.1	21.1
Great Britain	51.9	52.4	45.6	17.5	24.9	20.6	22.2	14.3
Hungary	72.5	29.5	50.7	42.9	24.2	27.9	23.3	15.9
Ireland	55.9	57.4	47.1	27.1	40.9	31.5	39.1	23.7
Israel	80.2	79.7	29.6	66.5	67.7	54.9	59.9	39.4
Japan	34.6	23.1	56.1	23.2	4.7	8.0	14.7	10.7
Latvia	62.4	44.9	52.3	65.5	28.5	25.6	19.8	28.4
Mexico	75.3	57.3	39.7	60.3	68.0	46.9	48.9	40.6
New Zealand	43.6	57.2	48.9	17.7	27.3	29.1	27.2	18.9
Norway	51.2	49.9	47.0	10.8	8.4	23.4	15.9	18.4
Philippines	61.3	40.0	49.8	66.3	50.2	37.8	35.4	26.6
Portugal	62.4	50.5	47.8	42.7	45.4	32.7	40.0	24.9
Russia	53.0	46.3	45.1	65.4	32.1	25.7	24.1	21.1
Slovenia	54.2	46.0	55.7	41.5	27.7	35.9	31.9	26.2
South Africa	72.2	52.9	43.2	59.5	51.6	39.9	47.3	31.0
South Korea	60.0	55.2	49.3	42.8	48.1	24.5	31.2	23.0
Spain	69.3	48.8	41.6	61.0	44.0	38.1	37.4	36.8
Sweden	57.9	51.0	44.2	17.7	11.7	31.3	23.7	20.9
Switzerland	58.9	60.3	63.4	7.6	12.8	42.8	26.3	23.0
Taiwan	50.5	32.9	64.0	21.0	20.0	9.0	16.5	19.6
United States	62.8	56.8	42.5	30.3	42.5	34.3	43.3	17.6
West Germany	64.8	46.7	52.0	15.4	16.8	38.0	21.1	14.4
High income	57.7	49.7	48.0	31.1	26.4	30.3	27.2	21.7
Medium/low income	58.2	46.2	49.7	52.1	45.2	31.0	34.5	27.5
Mean	58.3	48.9	48.4	35.6	30.3	30.8	28.8	22.7
Total	58.1	49.1	48.5	36.4	31.8	30.7	29.7	23.3

Notes: In the survey, East and West Germany are analysed separately. In Belgium there are only data from Flanders.

Source: Authors' analysis from *2005 International Social Survey Program* microdata.

Figure 2. Dispersion of importance given to different job attributes in 17 EU countries or territories



Source: Authors' analysis from *2005 International Social Survey Program* microdata.

3.3. SELECTING THE ATTRIBUTES OF A GOOD JOB: THE ECONOMIC AND SOCIOLOGICAL TRADITION

An alternative to using surveys on desired job attributes in the task of constructing an indicator of quality of work is to select the dimensions to be considered using different theoretical perspectives about the impact of different job attributes on workers wellbeing. This approach is not totally incompatible with the subjective approach presented in previous section, as the opinion of the workers can be one of the elements taken into consideration in the process of choosing the different possible dimensions of job quality. In fact, both approaches are clearly related. When the researchers are designing a questionnaire addressing the issue of attributes of a good job, the possible answers are not randomly selected, nor are the respondents offered an extensive and almost endless list of attributes; the possible choices are selected having in mind -either explicitly or implicitly- a model of job quality.

The economic tradition is rich in approaches, although the dominant school focuses on only one factor, wages. In this respect, there are coincidences between the subjective approach analyzed in previous section and the mainstream view: both perspectives back the selection of wages as a dimension to consider when building a system of indicators of job quality. The sociological tradition widens the analysis to include the intrinsic qualities of work, such as skills and autonomy, as well as physical and psychological risks together with other elements as pace of work, duration, etc. It is from this perspective that the multidimensional nature of work quality appears in full colours, widening the types of issues that should be considered when building a system of indicators of job quality. Table 2 presents a summary of the type of dimension of job quality highlighted by these different theoretical approaches.

Table 2. Dimensions of job quality suggested by the different Social Sciences traditions

The orthodox economic approach: compensating differentials	The radical economic approach:	Behavioural economic approaches	The traditional sociological approach: alienation and intrinsic quality of work	The institutional approach: segmentation and employment quality	Occupational medicine and health and safety literature: risks and impact of work on health	Work-life balance studies
Labour compensation: (1) wages	*Power relations:* (2) Industrial democracy as a compensating power	(3) Participation	*Objective strand:* (4) skills (5) autonomy *Subjective strand:* (6) powerlessness (7) meaninglessness (8) social isolation (9) self-estrangement	(10) Contractual status and stability of employment (11) Opportunities for skills development and career progression	*Conditions:* (12) Physical risks (13) Psychosocial risks; *Outcomes:* (14) Perceived impact of work on health (15) Absenteeism	*Working time:* (16) Duration (17) Scheduling (18) Flexibility (19) Regularity (20) Clear boundaries *Intensity:* (21) Pace of work and workload (22) Stress and exhaustion

Source: Authors' analysis.

4. MODELLING OF JOB QUALITY

4.1. METHODOLOGICAL OPTIONS

Drawing from the discussion presented below, this section is devoted to the debate of several dilemmas that the researcher has to bear in mind when to develop a quantitative indicator of job quality.

A) Results versus procedures.

In the process of measuring job quality it is possible to focus on the results reached in terms of the dimension considered important to job quality (employment security, working hours, etc.) or in the procedure, that is, participation of workers in the decisions affecting working hours, safety standards, etc. The former types of indicators value job quality on the basis of the output -are jobs safe?, is employment secure?, etc.-, while the latter measures job quality according to the decision process followed in setting and implementing a certain job characteristic (if the procedure is adequate, it is assumed that the outcome will be adequate too), or the inputs or resources used (for example, the existence of health and safety commissions in the establishment is taken as an indicator of good health and safety conditions). This last approach is often a second best solution justified by the lack of reliable information about the output. But it can be argued that, as we will see next section, procedures themselves can be an important (and positive) attribute of a job. For example, the existence of participation in the process of decision-making at the firm level can be interpreted in terms of better job quality irrespective of its impact on specific dimensions of job quality, as long as workers are given voice.

B) Static or dynamic.

During the last two decades labour market transitions has received increasing attention from labour economists. The relevance of dynamics as a key ingredient of job quality is based on the fact that implications and consequences of a certain employment status –for instance, temporary work- might vary if such state persists over time –for example, becoming a sort of trap of non-stable jobs. However, as the researcher's interest is placed on quality of work, the focus should be jobs, not people hired to perform them. If workers move from a low-quality to a high-quality job, if both jobs were already in the

economy, nothing changes from the point of view of the quality of the existing jobs. Based on this reasoning, an index of job quality does not require considering any dynamic dimension.

There are two cautions to be quoted regarding this issue. First, it can be argued that the implications of working in a "bad" job are different if individuals work in those jobs for life, or if those types of jobs are just a temporary stage in their career. In that case, it might be interesting to include the degree of transition as a separate indicator, complementing the information of the quality of jobs in a given country. Second, from a subjective perspective, having a job with good prospects of advancement, even if the present quality of the job is not so good, can be considered an important asset of the job. Nevertheless, the researcher can capture this dimension through some question about the opportunities of advancement in the current job position.

C) Constructed at individual or aggregate level?

As job quality refers to the impact of the attributes of existing jobs on the well-being of workers, all measure of job quality will necessarily be based on information collected at the level of individual workers.[4] However, because of its multidimensional nature, any holistic account of job quality requires making some form of aggregation of information about the different attributes collected at the individual level.[5] Depending on the intended use of the job quality indicator (or system of indicators), it is possible to carry out the aggregation of the different dimensions at a higher level than the individual. In fact, if our only aim is to compare overall job quality across countries, regions or sectors, there is no difference between doing the aggregation at the higher level (based on averages or other summary functions) and doing it at the individual level and then comparing the country averages.

Individual and aggregate-based indicators have both advantages and disadvantages. On the one hand, constructing the indicator at the aggregate level has the added (and important) advantage of allowing more flexibility for drawing information from different sources (different surveys or registers, for instance), while indices constructed at the individual level requires having measures of the different attributes for the same individual, which is only possible in practice by drawing from a single source.[6]

On the other hand, there are strong arguments for preferring indicators built from individuals' information. First, those measures constructed from aggregate data cannot take into account distributional or dispersion issues. Though this might not be a serious problem in cross-country comparative studies, this is specially damaging for issues such as job quality, which is very likely to vary more *within* than *between* countries.[7] There is certainly a way to partially account for the distribution even within an indicator constructed at the aggregate level, consisting in including distributional measures within the indicator. However, this only reduces this problem: once the indicator is constructed, the distributional element is be completely fixed and there is no way to explore any distributional issue beyond the particular indicator considered.[8] One common strategy followed in several indicators of job quality to address the problem of the distribution of job quality along gender lines is to include a separate indicator reflecting the gender gap in a given variable (usually wages). In our opinion a better way to address this issue is to build separate indicators of job quality (considering all variables) by gender, and then calculate the overall gender gap. This option has two advantages: first, it allows considering all dimensions of job quality from the gender (or any other) perspective offering a full picture of the gender distribution of job quality and such method is sound from a methodological point of view from the moment that this approach can dispense the introduction of a variable not directly related to job quality, but to the characteristic (gender, ethnicity, etc.) of people filling the different jobs.

A second disadvantage of constructing the indicator at the aggregate level is that the impossibility of studying interactions between the different dimensions forming the indicator or system of indicators. For example, one cannot analyse the concentration of "good" or "bad" jobs on specific groups of workers, the intersection between the different dimensions of job quality or the existence of compensation mechanisms between them. This aim is only reachable using indicators constructed a the individual level.

D) One size fits all?

People and countries might have different preferences on job attributes, giving different values to certain characteristics depending on the institutional and cultural context in which jobs are embedded. First, characteristics of employment interact with the

characteristics of social systems in ways that can make similar employment characteristics have very different implications for the well-being of the worker in different countries. For instance, generous unemployment benefits make job security a less important dimension than in context where no safety net is available for unemployed individuals. Second, cultural differences across countries are equally problematic, as long as they imply systematic differences in how people evaluate their own situation, and therefore in how their working environment will affect their (subjective) well-being. Values that emphasizes conformity can make the impact of low autonomy at work (another usual dimension of job quality) much less detrimental for the well-being of the worker (as is probably the case in Japan), whereas it can be crucial in cultural contexts that emphasize autonomy and personal achievement. These cultural variations lead also to considerable technical difficulties in simply measuring the different dimensions of job quality across countries in a truly comparable way (it makes it difficult to be sure that we are comparing the same thing rather than a different understanding of the same concept).

In terms of the construction of measures and indicators, international social research has dealt with this contextualisation problem mainly through the principle of functional equivalence, which implies allowing for different (but equivalent) operationalizations of the concepts being studied in the different contexts. They can be based on the criteria of experts or on the criteria of the people concerned themselves (in this case, the workers). For comparisons of large groups of countries such as the EU, and for concepts as normatively charged as job quality, the latter option seems particularly appealing. At a minimum, there must be a common definition of the overall issue being studied, even if at a very high level of generality. This definition can be reached by the three different paths highlighted in section 3. To base the selection of job attributes and the importance given to each one on workers would limit comparability and policy implications.

E) A composite index or a system of indicators?

The policy purpose of comparing job quality across the EU can be fulfilled by a system of indicators (that is, a coherent and interrelated set of measures of the different attributes of jobs that have an impact on the well-being of workers) or by a composite index (a single aggregate measure synthesizing the information of all the different attributes of

job quality). Both approaches involve the object of analysis (job quality), the selection of dimensions to be measured (ideally derived from theoretical models) and choosing those variables appropriate to evaluate such dimensions. While a system of indicators stops here, once we have scores for each of the dimensions of our model, a composite index goes one step further and aggregates the measures of selected dimensions within a single number. That implies a single, univocal and unidirectional understanding of what is job quality (no matter how many components it is based upon), which will unambiguously position the different countries (or whatever social group we are interested in studying) within a unidimensional axis going from bad to good (a ranking).

The advantages and disadvantages of the composite index mirror those of the system of indicators. The former implies a brutal simplification of a reality which is by nature complex and multidimensional. If not well constructed, it can easily lead to mercilessly wrong conclusions, which can have a very bad impact on the credibility and the usefulness of the whole effort of building it. Even though composite indices tend to be reported together with the detailed systems of indicators on which they are based, the numeric results, rankings, etc., deriving from the index are so attractive that they tend to draw all attention. On the other hand, composite indices can be very useful for policy evaluation and design, and they can certainly have a bigger impact (and more political force) than a system of indicators because its unambiguity.

F) Technical issues involved in aggregating indicators

Aggregation of different pieces of information within composite indices involves a two-step process: first, the different elements (variables, indicators or dimensions) have to be standardized, so that their scales become equivalent and they can be added together; second, each of the standardized elements must receive a weight (a multiplication factor proportional to the importance that we want to assign to each element).[9] Once the components of the index have been standardized and weighted, they can be added together.[10]

There are two main ways to decide which weights to assign to the different elements of a composite index: a data-driven way and a theory/policy-driven way. The former approach implies analysing the structure of correlations between the different

variables measuring the dimensions and let the statistical procedure assign the weights in proportion with how they correlate with each other. This method implies assuming that all the variables included in the analysis are measures of the same latent (unobservable) phenomenon: the structure of correlations between them can be used to infer the latent variable from the observed variables. The main problem with this method is that it is a black-box, the logic linking the elements and the composite index being mathematical (and often difficult to grasp) rather than human or theoretical-based. The resulting composite index is the best possible summary of the individual elements included in the analysis, but not necessarily a good measure of, say, job quality. For this reason, especially for indices constructed for policy purposes, it is much better to base the weights of the index on a sound theoretical/policy model of the concept to be measured, providing a sound justification for the choices made in this matter.

The issue of weighting seems solely problematic in composite indices, as the main result in this case is a weighted aggregate of different pieces of information (the dimensions of job quality). However, it would be an error to think that by using systems of indicators we avoid the problem of weighting. On the one hand, the different indicators that compose the system are often themselves the result of a process of aggregation of individual variables very similar to the process of producing a composite index. On the other hand, a system of indicators is a set of different pieces of information put together: if we have a system of indicators with five dimensions all given the same importance in the presentation of results, is that not very similar to producing a composite index with equal weights for each of the five dimensions? And after all, it is impossible to avoid that the users of the system of indicators will produce *in their own mind* an overall impression of the level of job quality in the different countries after looking at the different dimensions of the system of indicators (aggregating themselves the sub-dimensions mentally and highlighting those results that better fit their beliefs).

G) Periodicity

Monitoring job quality necessarily involves periodical updates of information. There are three main rationales for determining the periodicity of job quality indicators: first, to adapt this periodicity to the needs of the users of the indicators; second, to adapt the

periodicity of the indicators to the pace of change of job quality itself. And third, the more prosaic concern with the availability of periodically updated data.

Regarding the first point, when the indicators have been constructed with policy purposes, it seems logical to try to fix a periodicity that fits those purposes. In particular, the information provided by the indicators can be intended to feed specific political processes, such as collective bargaining periods or revisions of employment policies. A yearly periodicity is often fixed because it is frequent enough as to be able to fit most policy cycles, and to feed the increasing impatience of public opinion with respect to statistical information.

While a yearly periodicity should be able to fit most policy cycles, it might not be the most suited to the pace of change of the phenomenon being studied. Empirical evidence suggests, first, that most of the elements of job quality change relatively slowly and, second, that job quantity can change at a considerably higher rate than job quality (Eurofound, 2006). Furthermore –and which is even more important-, while conditions of work (mainly dependent on the technological and organizational characteristics of the production processes) change slowly and incrementally, so that only in the long term their effects can be felt clearly and unambiguously, conditions of employment tend to change more quickly, as they are more sensitive to the situation of labour market and can be abruptly affected by changes in regulations. This suggests the convenience to carry out a modular update of the indicator as a second-best policy, though the use of different sources of data would prevent the calculation of the indicator at individual level.

4.2. SOME GUIDELINES FOR MODELLING JOB QUALITY

Although it is beyond the scope of this report to present a new indicator of job quality, there are a list of dimensions that can be considered as good candidates for inclusion in an indicator of job quality, as well as to briefly discuss the rationale behind their inclusion and the potential problems of selecting measurement variables and interpreting the results.

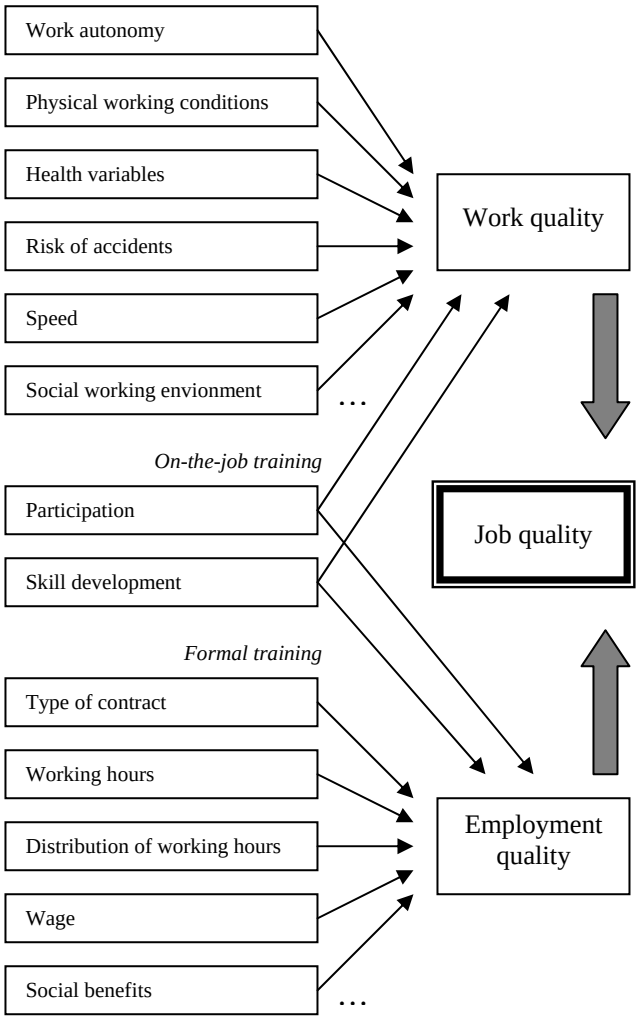
First of all, any job quality measure must be worker-centred. In other words, any indicator has to aim measuring characteristics of jobs in a given economy, which implies that areas of great importance of people well-being –such as the availability of employment or income distribution- should be left out as long as they are not directly attributes of the jobs people have.

Secondly, job quality can be decomposed in two different areas, *employment quality* and *work quality*. Employment quality includes all those elements potentially affecting workers' well-being related with the employment relation, that is, wage, type of contract, working hours, distribution of working hours, etc. Quality of work makes reference to all those attributes of the work itself and the working environment, *i.e.* the productive task performed, with potential impact on workers' well-being: temperature, noise, physical effort, speed, autonomy, etc.[11] The nature of the elements of work and employment quality is quite different; work quality is related to the material characteristics of the task performed and the environment within which it is performed, while employment quality is related to the contractual relation between employer and employee. Therefore, this preliminary distinction makes convenient to divide the set of variables to be included in an index of job quality in these two different areas or dimensions: work and employment (figure 3).

The other theoretical consideration to bear in mind when designing an indicator of job quality relates to institutions, particularly, with welfare programs. Jobs do not exist in a vacuum, but in a social context conformed by public and private institutions like the Welfare State and the family. Therefore the impact of a given job characteristic on workers' well-being depends on the interplay of such characteristic with the existing welfare arrangements and the supporting role played by the family. For example, a given working schedule might conflict or not with the employee's work-life balance depending on the existence of sufficient and affordable supply of nursery homes and kindergartens to whom the worker can trust the caring of the dependent members of the family while at work. If there is a wide program of public kindergartens, or a helping retired grandma or grandpa willing to watch over the younger ones while their parents are working, the lack of family friendly provisions at work might not interfere with the work-life balance of workers.

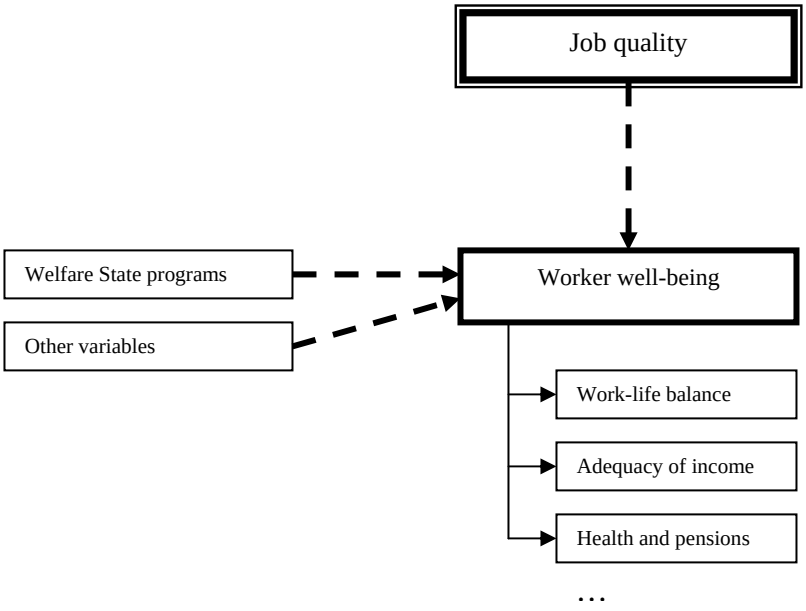
Something similar can be said about wages. A low wage might have different implications if there is public housing or a system or income tax credit complementing directly or indirectly the take home pay, or if there is no such social programs (see figure 4).

Figure 3. Sketching a general model of job quality



Source: Authors' analysis.

Figure 4. Interplay of job quality and other institutional characteristics



Source: Authors' analysis.

As the existence of such interconnections between job characteristics, social policy and family supporting roles (to which we could add the employment level itself) have clear and important implications in terms of workers' well-being, it is convenient to debate whether the indicator of job quality should account for the complementary role played by such aspects or not.[12] From one point of view, it can be argued that if the important thing is the impact of a given job characteristic on the workers well-being, the existence of a specific public provision compensating the lack of a job amenity –for example, state-provided child care for some workers- should be directly part of the indicator. Otherwise we could –wrongly- conclude that a group of workers are facing a poor work-life balance while such situation is not so thanks to the existence of a public programme. The principle of homogeneity or comparability would then support the introduction in the indicator of those areas of public intervention (as health or pensions, for example) with a direct impact on worker well being, otherwise the results in terms of job quality could be biased against those countries with larger Welfare States.

From a different perspective it can be argued that including in the system of job quality indicators a dimension of state-provided social benefits to workers undermines one

of the criterion of limiting the concept job quality to those characteristics directly related to the job. A different issue is the interpretation of the results: if the institutional context affects the impact of the different job characteristics on the well-being of workers, they will have to be taken into account before drawing any implications from the crude comparisons of the scores of the indicator. To honour the complexity of the issue, it should be acknowledged that many public interventions affecting job quality, in fact all regulations of working conditions (from redundancy payments to paid vacation and health and safety standards) of compulsory compliance by the firms are direct determinants of key dimensions of job quality. Thus, under this perspective, the researcher is not really isolating private from public, but isolating private job characteristics (whether product of unilateral decision taken by the firm, negotiated with workers, or impose by the public administration) from other public (or private) interventions outside the realm of the work-employment relation. Therefore, the interrelations between job quality and social institutions must always be explicitly considered when doing international comparisons of job quality, especially when (as in the previous example of social benefits in the US and EU) there are important differences in the social systems of the countries involved in the comparison.

A third, compromising, alternative is to construct a kind of *satellite account* to include those elements of social policy with direct impact on workers´ well-being.[13] Such an approach would obey to the criteria of concentrating on the job realm when measuring job quality, but at the same time would force the user of the indicator to consider the way in which public intervention through social policy softens the negative impact of disamenities (and complements the amenities) of job quality on workers well-being. This type of account should include all those elements of social policy affecting job quality.

5. CRITICAL SURVEY OF EXISTING INDICATORS OF JOB QUALITY

Previous sections should have made clear that measuring job quality is a hard task. However, that does not mean that there has been no attempt to do it. In fact, the concern about the evolution of job quality has led to the development of a good number of

indicators and systems of indicators to measure it. These proposals widely vary in terms of ambition, specific dimensions considered in the analysis, variables used to measure them, etc. Furthermore, they are not exclusive of the academia and international organizations, but trade unions have also made increasing efforts for constructing quantitative indices of quality of work. The main characteristics of the 18 measures of job quality are reviewed are summed by tables 3 –which includes the acronyms used later- and 4

It is not easy to summarize such amount of information, but several substantial conclusions can be drawn from this review. The main one is that, despite the current availability of several indices of job quality, there is still a need at the EU level of a worker-oriented, individually-constructed and properly grounded job quality indicator in order to measure, compare and monitor job quality in the different member states. While some of the existing indicators are excellent, some others are not so good, but all of them have some shortcomings that make still necessary to keep on devoting efforts to the development of a better indicator. These indicators are discussed, highlighting their main strengths and weaknesses, according to the guidelines presented above.

First, eight of the indicators reviewed are not really (or not strictly) measures of job quality, since they comprise dimensions associated to other issues such as labour market access and even areas as unrelated to job quality as distribution of disposable income, illiteracy rate or standard macroeconomic indicators. This problem is especially evident in the case of the International Labour Organization Decent Work indices and the Laeken indicators. On the other hand, the EJQI, the EWCS, the SQWLI, the QEI, the DGBI and the WCI and the individual academic proposals avoid this problem. In addition, most of the indicators include some measure of social security, which is problematic when making cross-country comparisons because of the existence of very different welfare regimes with substantially different roles for private and public sector.

Table 3. List of acronyms, complete names, sources and databases of the reviewed indices of job quality reviewed

Acronym	Complete name	Scope	Source	Databases
Laeken	Laeken indicators of job quality	European Union	European Commission (2008)	ECHP, ELFS, SILC
EJQI	The European Job Quality Index	European Union	Leschke, Watt & Finn (2008)	ELFS, EWCS, SILC. AMECO, ICTWSS
EWCS	European Working Conditions Survey	European Union	Parent-Thirion *et al.* (2007)	Itself a data source
GJI	Good Jobs Index	Middle-income and developing countries	Avirgan, Bivens & Gammage (2005)	ILO databases
DWI-1	Decent Work Index-1	Developed and developing countries	Ghai (2003)	ILO databases
DWI-2	Decent Work Index-2	Developed and developing countries	Bonnet, Figueiredo & Standing (2003)	ILO databases
DWI-3	Decent Work Index-3	Developed and developing countries	Anker *et al.* (2003)	ILO databases
DWI-4	Decent Work Index-4	Developed and developing countries	Bescond, Châtaignier & Mehran (2003)	ILO databases
QEI	Quality of Employment Indicators	Canada, U.S. and Europe	Brisbois (2003)	EWCS, ERNAIS
IJQ	Indicators of Job Quality	Canada	Jackson & Kumar (1998)	GSS, SWA
SQWLI	Subjective Quality of Working Life Index	Czech Republic	Vinopal (2009)	*Ad hoc* survey
DGBI	DGB Good Work Index	Germany	Mußmann (2009)	*Ad hoc* survey
WCI	Austrian Work Climate Index	Austria	Preinfalk, Michenthaler & Wasserbacher (2006), Michenthaler (2006)	IFES omnibus survey (dedicated module)
IQL	Indicators of Quality of the Labour Market	Spain	Caprile & Potrony (2006), Toharia, Caprile & Potrony (2008)	NSI, MLI
QWF	Quality of Work in Flanders	Flanders (Belgium)	Flanders Social and Economic Council (2009)	*Ad hoc* survey
Tangian	Tangian's proposal	European Union	Tangian (2007)	EWCS
GBJI	Good and Bad Jobs Index	Middle-income countries	Ritter and Anker (2002)	IPSS
ICQE	Index of the characteristics related to the quality of employment	Chile	Sehnbruch (2004)	*Ad hoc* survey

Notes: ECHP = European Community Household Panel; ELFS = European Labour Force Survey; SILC = Statistics on Income and Living Conditions; EWCS = European Working Conditions Survey; AMECO = Annual Macroeconomic Database of the European Commission; ERNAIS = Ekos Rethinking North American Integration Survey; GSS = General Social Survey; SWA = Survey of Work Arrangements; IFES = Institut für empirische Sozialforschung; NSI = National Statistics Institute; MLI = Ministry of Labour and Immigration; IPSS = ILO People's Security Surveys

Source: Authors'analysis.

Table 4. Summary of the main indicators of job quality

Index	Type of indicator			No. of…		Type of variables						Individual data	Periodicity
	Multi-purpose	Worker-oriented	System	Aggregate	Dimensions	Variables	Subjective	Objective	Results	Procedures	Static	Dynamic		
Laeken	X		X		10	25		X	X	X	X	X	NO	Annual
EJQI		X	X	X	6	17	X	X	X	X	X		NO	Annual
EWCS		X	X		4	Many	X	X	X	X	X		YES	Every 5 years
GJI	X		X	X	5	16		X	X	X	X		NO	Single exercise
DWI-1	X		X	X	4	9		X	X	X	X		NO	Single exercise
DWI-2	X		X	X	7	67		X	X	X	X		NO	Single exercise
DWI-3	X		X		11	37		X	X	X	X		NO	Single exercise
DWI-4	X		X	X		8		X	X	X	X		NO	Single exercise
QEI		X	X		5	11	X	X	X	X	X		NO	Single exercise, with ocassional updates
IJQ	X		X		7	27	X	X	X	X	X	X	NO	Single exercise
SQWLI		X	X	X	6	18	X		X	X	X		YES	Single exercise
DGBI		X	X	X	3	31	X		X	X	X		YES	Annual
WCI		X		X	4 (16)	25	X	X	X		X		YES	Semesterly
IQL	X		X	X	8	38		X	X	X	X	X	NO	Annual
QWF		X	X	X	2	10	X		X	X	X		YES	Every 3 years
Tangian		X		X	10	109	X	X	X	X	X		YES	Single exercise
GBJI		X	X	X	1	6	X		X		X	X	YES	Single exercise
ICQE			X	X	5	15		X	X	X	X		YES	Single exercise

Source: Authors' analysis.

Second, some dimensions highlighted as important by the Social Sciences literature (see section 3) are absent in most indicators. Particularly, this applies to work intensity, an omission largely conditioned by the absence of other sources of information apart from the EWCS, whose periodicity is not annual. Only those indices using this quite specific survey avoid this limitation. Furthermore, there are some important indicators –the Laeken indicators, the DWI-1, the QEI and the QWF- that make no reference to wages, which is clearly a serious omission.

Third, there are five indices that yield no aggregate measure of job quality, but only offer a system of indicators. By proceeding in that way, they avoid setting –and justifying- weights for the different dimensions. However, this cannot be seen as a positive feature of an indicator because it makes the overall evaluation of the results can be quite ambiguous (the different dimensions can yield contradictory results); therefore, each observer might anyway use their own value judgments to "weight" the results obtained for the different dimensions.

Fourth, the number of dimensions and measurement variables largely varies across the indicators, from six variables (the GBJI) to more than a hundred (the EWCS and Tangian's proposal). In most of the cases, aggregation is carried out on the basis of equal weights, usually without any theoretically sound explanation, though sometimes variables are previously carefully classified into different dimensions. There are two exceptions to this rule: the SQWLI, which weights for the importance given by each worker to each attribute, and Tangian's indicator, which considers that the importance of a dimension depends on the number of questions included in the EWCS about it. The first approach, though quite original, has the potential problem of the lack of independence between real and desired job attributes, an issue discussed above The second one is likely to lead to wrong conclusions because the number of questions is unrelated to the relevance of each dimension in the survey.[14] This review makes clear that much more effort (justification and documentation) is needed with regard to the aggregation of the different job attributes and dimensions.

Fifth, as mentioned in the previous section, using job satisfaction as a component of job quality involves serious problems. It should be mentioned that only two of the indices

reviewed –the QWF and the SQWLI- are based solely on subjective variables. Another one (the DGBI) relies on subjective dimensions and workers' subjective evaluations of "objective" job attributes (noise, working time, etc.). Including job satisfaction together with other components of job quality has the problem of using input and output indicators simultaneously, thus counting certain attributes twice, a shortcoming problem present in the QWF and the SQWLI, but not in the case of the DGBI.

Sixth, most indicators include both procedure and results variables, with only the GBJI exclusively referring to results. Another relevant aspect has to do with the static or dynamic nature of the variables considered. Though there are many indicators including variables related to opportunities of advancement in the current job, few indices –the Laeken indicators, the IJQ, the IQL and the GBJI- are truly dynamic in a strict sense, that is, they present longitudinal measures of job or income mobility. It is not clear, though, that such objective dynamic variable should be included in a job quality indicator.

Seventh, many of the measures reviewed here present methodological problems when trying to include gender or age group gaps. As argued above, a more convenient approach is to compute scores for specific segments of the labour market thought to need some special attention (long-term unemployed, women, youth, immigrants, etc.). One way to address this problem in an effective way is to design indicators that can be computed at individual level. This strategy would allow comparing job quality for specific groups of workers. Eight of the indices reviewed in the previous subsection -the ECWS, the SQWLI, the DGBI the WCI, the QWF, Tangian's proposal, the GBJI and the ICQE- have this desirable characteristic.

Eighth, periodicity, authorship and data sources are usually interrelated. Those indicators backed by institutions tend to be remarkably more regular than those authored by a single researcher. In addition, while institutional indices often are based on aggregate data derived from surveys, in the case of academic proposals it is not uncommon to find indicators computed using micro-data and, therefore, allowing the calculation of indices by population subgroups. Finally, it is obvious that if results are based on surveys, regularity will be extremely conditioned by their periodicity. In order to avoid these kinds of

limitations, many proponents opt to exploit only labour force surveys or aggregate labour market data that can be obtained on a regular basis.

Ninth, with relation to results, which obviously only applies to those indices monitoring the same countries and periods, it should be mentioned that Nordic countries often dominates the rankings, yielding, in general, sensible and apparently coherent pictures of job quality. There are, of course, exceptions, like the DWI-4, according to which job quality is greater in some Sub-Saharan countries than in some EU member states.

Tenth and last, the considerable consistence of the rankings suggests that the differences in job quality across Europe are so important and consistent that any indicator which aggregates information from a sufficiently large number of relevant variables is likely to produce sensible results. Of course, this does not mean that it is not important to develop a sound theoretical framework for a composite indicator on job quality in Europe: this is necessary to be able to interpret properly the results, to make sense of any abnormality that may appear, to give meaning to the whole exercise. However, knowing that the different dimensions of job quality have a remarkable consistence among themselves and that there are systematic and clear differences across Europe makes the idea of developing a good quality of work index even more attractive.

6. CONCLUSIONS

Job quality is definitely a relevant aspect of quality of life, which probably has not received as much attention as it deserves, as long as work activities mean one of the nucleus of people's lives. The aim of this article has been, first, to argue why job quality should attract more attention from researchers and policy makers. In the second place, we have analysed the different ways of approaching to job quality, highlighting the merits of a methodological strategy that draws from the economic and sociological traditions in order to point out the main dimensions to be included in any indicator of job quality. Third, we have suggested a sketched model of job quality and discussed the different dilemmas researchers face when trying to model job quality. Finally, on the basis of such analyses, around twenty indicators of quality of work proposed in the literature have been thoroughly

dissected. A clear conclusion has arisen from that analysis: none of the current indicators of job quality is completely satisfactory from a methodological point of view, existing room to devote more efforts and resources to construct a theoretically sound and transparent indicator.

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[1] See Muñoz de Bustillo *et al*. (2009) for an extensive review of the empirical literature on compensating wage differentials.

[2] The score is constructed by giving different points, from 0 to 6 to the answer to the question "*how satisfied are you in your (main) job?*" Answers ranks from completely unsatisfied (0) to completely satisfied (6), and then the result is rescaled to the standard 0-10 scale to make the interpretation of the result easier.

[3] This difference, though, is explained by the Eastern European Countries.

[4] The only potential alternative would be to try to measure the attributes of the jobs themselves, understanding jobs as positions within productive organizations which correspond to coherent sets of tasks and responsibilities (for an example of such an approach, see Hurley and Fernández-Macías, 2008). However, in fact, even in this case, information is collected at the level of individual workers (or jobholders) rather than at the job itself. Without jobholders, there are no jobs.

[5] By aggregation here we only mean putting together different pieces of information within a coherent and structured model of job quality.

[6] In this case, possibly surveys, since administrative registers does not usually contain very detailed information on worker's characteristics.

[7] For most of the EU, this is certainly the case, though maybe not for all countries. For some examples, see Parent-Thirion *et al*. (2007).

[8] This inflexibility can be quite important for an EU job quality indicator, because the distributional aspects of job quality can vary across countries (in some countries, gender might be the key determinant of wage inequality, whereas in others it might be ethnicity) and over time (for instance, a surge of immigration such as the one experienced by Spain in recent years has changed completely the distribution of good and bad jobs across the population).

[9] By standardization we simply mean transforming the different dimensions so that their scales are equivalent and can be aggregated. The most frequent standardization is converting to zeta units (subtracting the average

and dividing by the standard deviation), but this is neither the only nor the best method in all situations (because it transforms the differences into relativities, it can obscure differences in the distribution which can be quite important, so in some cases it is better to use other standardization methods, as described in Nardo *et al*. (2005)

[10] Even the adding of the standardized weighted elements can be done in different ways. The most frequent way is simply arithmetic addition (or averaging, which is the same but dividing by the number of elements or the sum of weights), which is adequate when we consider that the different elements of job quality can be functional equivalents and compensate each other, and that they add to job quality in a linear way. They can also be multiplied, which assumes that the more good (or bad) elements present, the bigger their impact on overall job quality. Or there can be threshold values, so that without a specific element there is no increase in job quality even if the others are present.

[11] In the literature, this differentiation between employment and work is sometimes refereed as *extrinsic* versus *intrinsic* dimensions of work.

[12] It can be argued that the negative implications of the lack of employment security are different in a context of rising labour demand and in a context of rising unemployment.

[13] According to the OECD Glossary of Statistics, satellite accounts "*provide a framework linked to the central accounts and which enables attention to be focussed on a certain field or aspect of economic and social life in the context of national accounts; common examples are satellite accounts for the environment, or tourism, or unpaid household work*".

[14] Parent-Thirion *et al*. (2007) point out that there are many questions asked with the aim of verifying the consistency of previous responses; some intend to capture new job attributes not addressed in previous waves and, in other cases, the number of questions on a certain topic is associated to the difficulty of measurement of a particular dimension. For example, wage is a extremely important dimension that only requires a single question to be captured.